CLAIMS

1. Sequence of synthetic or natural retroelements, in particular of retroviral DNA, characterized in that it comprises an insertion sequence incorporated in a region which can be transferred into a target cell and integrated into a recombinant provirus when said target cell is infected by a retrovirus comprising said sequence of retroelements, said insertion sequence comprising a nucleotide sequence of interest which can be integrated into the genome of a target cell as well as a recognition sequence, preferably a single recognition sequence which can be recognized by a recombinase.

2. Sequence of retroelements according to Claim 1, characterized in that said insertion sequence is incorporated into a cis-acting region of said sequence of retroelements.

3. Sequence of retroelements according to Claim 1, characterized in that said insertion sequence is incorporated into the 3' LTR or 5' LTR region of said sequence of retroelements.

4. Sequence of retroelements according to Claim 1, characterized in that said insertion sequence is incorporated into the U3 region of the 3' LTR, the U5 region of the 5' LTR or the R region of said retroviral sequence.

5. Sequence of retroelements according to any one of the preceding Claims, characterized in that said recognition sequence which can be recognized by a recombinase is situated upstream from said nucleotide sequence of interest.

6. Sequence of retroelements according to any one of the preceding Claims, characterized in that it comprises a nucleotide sequence coding for a recombinase capable of recognizing said recognition sites.

7. Sequence of retroelements according to Claim 6, characterized in that the nucleotide sequence coding for a recombinase is situated between the 5' LTR and 3' LTR regions of said sequence of retroelements.

8. Sequence of retroelements according to Claim 6 or 7, characterized in that the nucleotide sequence coding for a recombinase codes for the Cre protein.

9. Sequence of retroelements according to any one of the preceding Claims, characterized in that said recognition sequence comprises the recognition site LoxP

10. Sequence of retroelements according to any one of the preceding Claims, characterized in that said nucleotide sequence of interest contains a sequence coding for a protein or an RNA of interest, in particular an antisense RNA or a ribozyme sequence.

11. Sequence of retroelements contained in the plasmid deposited on 13 June 1995 with the CNCM under No.I-1599.

12. Retroviral vector characterized in that it comprises a sequence of retroelements according to any one of the preceding Claims.

13. Retroviral vector according to Claim 12, characterized in that said vector is a defective Moloney murine leukemia provirus comprising said recognition site in its U3 region of the 3' LTR, its U5 region of the 5' LTR or its R region.

14. Cell host having integrated in its genome a proviral structure comprising a single LTR sequence of a retroviral vector according to Claim 12 or 13, said LTR sequence comprising a unique copy of a nucleotide sequence of interest.

15. Cell host according to Claim 14, characterized in that it is a eukaryotic cell whose proviral structure is essentially free of PBS sequences, encapsidation and dimerization signal and PPT.

16. Method for introducing a gene into a host cell, said method being characterized in that it comprises the infection of said host cell by the retroviral vector according to Claim 12 or 13.

17. Method for expressing a molecule aided by a sequence of interest in a host cell, said method being characterized in that it comprises :

- the infection of said host cell by a retroviral vector according to Claim 12 or 13 comprising said nucleotide sequence of interest;
- the growth of said host cell under conditions permitting the expression of said nucleotide sequence of interest; and
- the production of the desired molecule.

18. Use of a retroviral sequence according to any one of the Claims 1 to 11 in the production by host cells of proteins or RNAs encoded in a nucleotide sequence of interest.

19. Use of a retroviral vector according to Claim 12 or 13 in the production by host cells of proteins encoded in a nucleotide sequence of interest.

20. Use of a retroviral sequence according to any one of the Claims 1 to 11 in the medical treatment of a patient for the purpose of integrating a nucleotide sequence of interest into the genome of target cells.

21. Use of a retroviral vector according to Claim 12 or 13 in the medical treatment of a patient for the purpose of integrating a nucleotide sequence of interest in the genome of target cells.

22. Pharmaceutical composition containing a retroviral vector according to Claim 12 or 13 in combination with an acceptable pharmaceutical excipient.

23. Use of the composition according to Claim 22 for the purpose of integrating a nucleotide sequence of interest comprising a nucleotide sequence capable of being expressed in the genome of target cells, said composition being constituted by an effective amount of a retroviral vector according to Claim 12 or 13.

24. Pharmaceutical composition constituted by host cells according to Claim 14.

ADD B2

Add D5